



IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Docket No. DKT 99083

*In the Application of:*

Hummel et al.

**U.S. Serial No.:** 09/840,434

**Filed:** April 23, 2001

**Confirmation No.** 4174

**For:** BACK DRIVE SILENT CHAIN  
SYSTEM WITH LOW PROFILE  
SPROCKET

**Examiner:** J. Stefanon

**Group Art Unit:** 3682

**Express Mail No.** EL 929181635 US

**Dated:** December 3, 2002

**RECEIVED**

DEC 06 2002

**GROUP 3600**

**FIRST RESPONSE TO FINAL ACTION – REQUEST FOR RECONSIDERATION**

Commissioner for Patents  
**BOX AF**  
Washington, DC 20231

Sir:

This responds to the communication of November 18, 2002.

As did paragraph 6 of the action dated May 22, 2002, paragraph 2 of the communication dated November 18, 2002, rejects claims 1 – 6 and claim 9 under 35 U.S.C. §102(b) as anticipated by U.S. Patent no. 5,989,140 to Ichikawa et al. (Ichikawa et al. '140). Applicants amended independent claim 1, from which claims 2 through 4 depend, and independent claim 5, from which claims 6 and 9 depend, in response to that earlier rejection. Those claims, that required a surface of links in the case of claim 1 and a surface of link plates in the case of claim 5, to conform "closely" to a sprocket, were amended to also require the surface to conform for driving contact.

Applicants previously argued that, as originally presented, claims 1 and 5 were not anticipated by Ichikawa et al. '140 because Ichikawa et al. '140 does not disclose a chain having a surface that conforms to a sprocket surface. Rather, Ichikawa et al. '140 discloses a chain having plates that form a flat back surface. Ichikawa et al. '140 also discloses a sprocket 6 having teeth that have tops 6A that are arcuate and concentric with the rotational center of the sprocket 6. Ichikawa et al. '140 col. 4 lines 21 – 24. The arcuate tops 6A support the flat surfaces F and f of links 2 and 3 and the flat surfaces f of the links 7 and 2A. *Id.* at col. 4 lines 24 – 30. The flat surfaces F and f do not conform to arcuate surfaces 6A at all. They certainly do not conform closely.

The applicants also argued that the surfaces F and f of the chain disclosed by Ichikawa et al. '140 do not provide driving contact. Rather, driving contact is provided by the sub-teeth t' of the chain links that engage the teeth of the sprocket 6. Ichikawa et al. '140 col. 4 lines 1 – 5. Ichikawa et al. '140 teaches that driving contact can exist between the chain and sprocket teeth even if the surface f does not contact the arcuate surface 6A at all during engagement. *Id.* col. 4 lines 34 – 39. Therefore, Ichikawa et al. '140 clearly does not teach or suggest that driving contact between the arcuate sprocket surface and the flat chain surface.

At paragraph 5, the communication of November 18, 2002, explains the rejection of claims 1 – 6 and 9. That paragraph suggests that driving contact is an intended use that does not structurally distinguish applicants' claims from the disclosure of Ichikawa et al. '140. That paragraph additionally states that Fig. 1 of Ichikawa et al. '140 discloses that the flat surfaces of the chain of Ichikawa et al. '140 conform to the sprocket "as broadly claimed." The communication of November 18, 2002, does not suggest that Fig. 1 of Ichikawa et al. '140 discloses a chain and sprocket that is different from the description of a chain having a

flat surface that contacts an arcuate surface of a sprocket. Nothing in Ichikawa et al. '140 would support such an assertion.

The explanation of paragraph 5, and the rejection it supports, does not give effect to the requirements of claims 1 and 5. Claims 1 and 5 do not require flat surfaces that conform broadly. Rather, those claims require that links of a chain, in the case of claim 1, and link plates in the case of claim 5, have a surface that "conforms closely" to sprocket protrusions in the case of claim 1 and to a portion of the sprocket in the case of claim 5. That is, that the chain link surface must conform closely to the sprocket surface.

Further, as previously amended, both claims require that the link surface conform closely for driving contact. Driving contact is a functional requirement for the required close conformity. That is, there must be close conformity, a structural requirement, and that structural conformity must support the functional requirement of driving contact.

Even if a flat link surface and an arcuate sprocket surface, as disclosed by Ichikawa et al. '140, could be construed as broadly conforming, they do not closely conform and they cannot closely conform for driving contact. Ichikawa et al. '140 does not teach or suggest that a flat surface and an arcuate surface conform closely or that there is driving contact between those surfaces. Rather, Ichikawa et al. '140 teaches that driving contact occurs at the sub-teeth and that driving can occur when the flat surface of the links does not contact the arcuate sprocket surface. Ichikawa et al. '140 does not teach link surfaces that conform closely to a sprocket to provide driving contact. Ichikawa et al. '140 does not teach or suggest applicants' invention as claimed.

As did paragraph 8 of the action dated May 22, 2002, paragraph 4 of the communication of November 18, 2002, rejects claims 7 and 8 under 35 U.S.C. §103(a) as unpatentable over Ichikawa et al. '140 in view of U.S. patent no. 270,723 (Aydelott '723).

Claims 7 and 8 are dependent claims that depend from independent claim 5. As applicants have previously acknowledged, Aydelott '723 teaches conforming and driving contact. However, it teaches conforming and driving contact by links forming a series of teeth. Aydelott '723 does not teach or suggest applicants' invention and Aydelott '723 does not suggest modification of Ichikawa et al. '140 to teach applicants' invention.

Neither Ichikawa et al. '140 nor Aydelott '723 nor any other prior art of record teaches or suggests applicant's invention as claimed.

### **CONCLUSION**

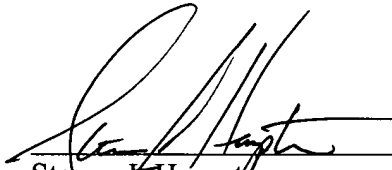
As set out above, the claims distinguish over the prior art of record. Applicants respectfully request that the rejections of the communication of November 18, 2002, be reconsidered in view of the foregoing. If the examiner believes that discussion with applicants' attorney would be helpful, applicants' counsel would appreciate an opportunity to discuss this application.

Please charge any additional fees or credit overpayment to the deposit account of McAndrews, Held & Malloy, Ltd., Account No. 13-0017.

Respectfully submitted,

DATE: December 3, 2002

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